

TLS-350(R) CONSOLE NON-HAZARDOUS AREA

AMBIENT TEMPERATURE RANGE
 $0^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$
 [Ex ia Ga] IIA

ASSOCIATED APPARATUS

TLS RF CONSOLE
 CERTIFICATE NOS.:
 IECEX UL 06.0003X

UNSPECIFIED
 RECEIVER

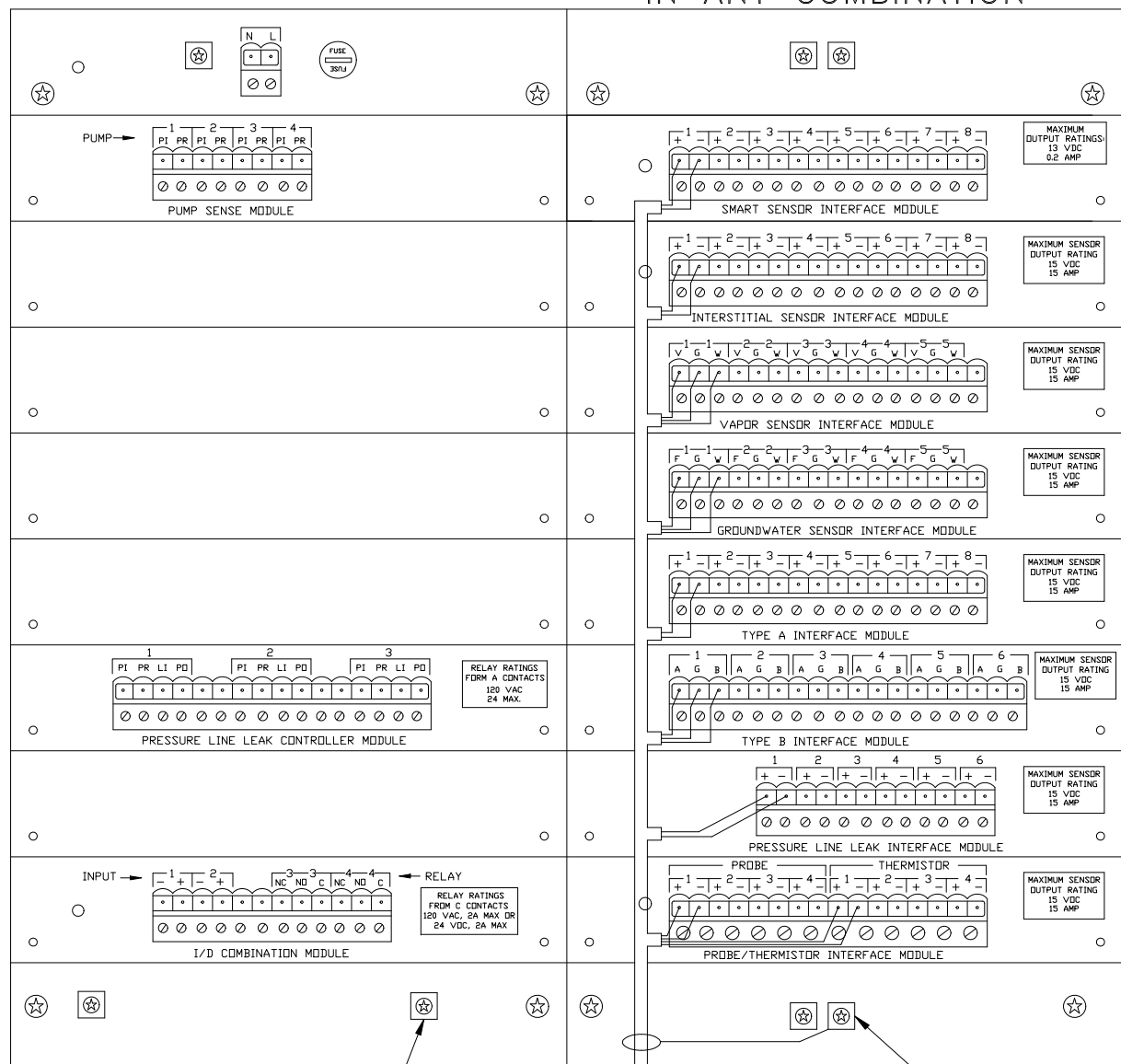
TLS-350 CONSOLE
 TLS-350R CONSOLE
 CERTIFICATE NO.:
 IECEX UL 08.0015X

AC NEUTRAL
 CHASSIS GROUND
 AC LINE
 BARRIER GROUND
 SEE NOTE 8

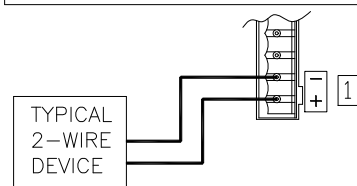
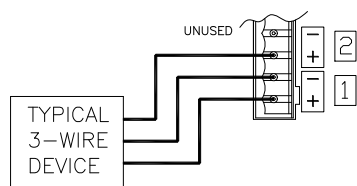
TLS RF CONSOLE
 OPTICALLY
 ISOLATED
 INTRINSICALLY
 SAFE CIRCUITS

POWER MODULES
 MAXIMUM OF 8
 SEE NOTE 7

INTRINSICALLY SAFE
 MODULES
 MAXIMUM OF 8
 IN ANY COMBINATION



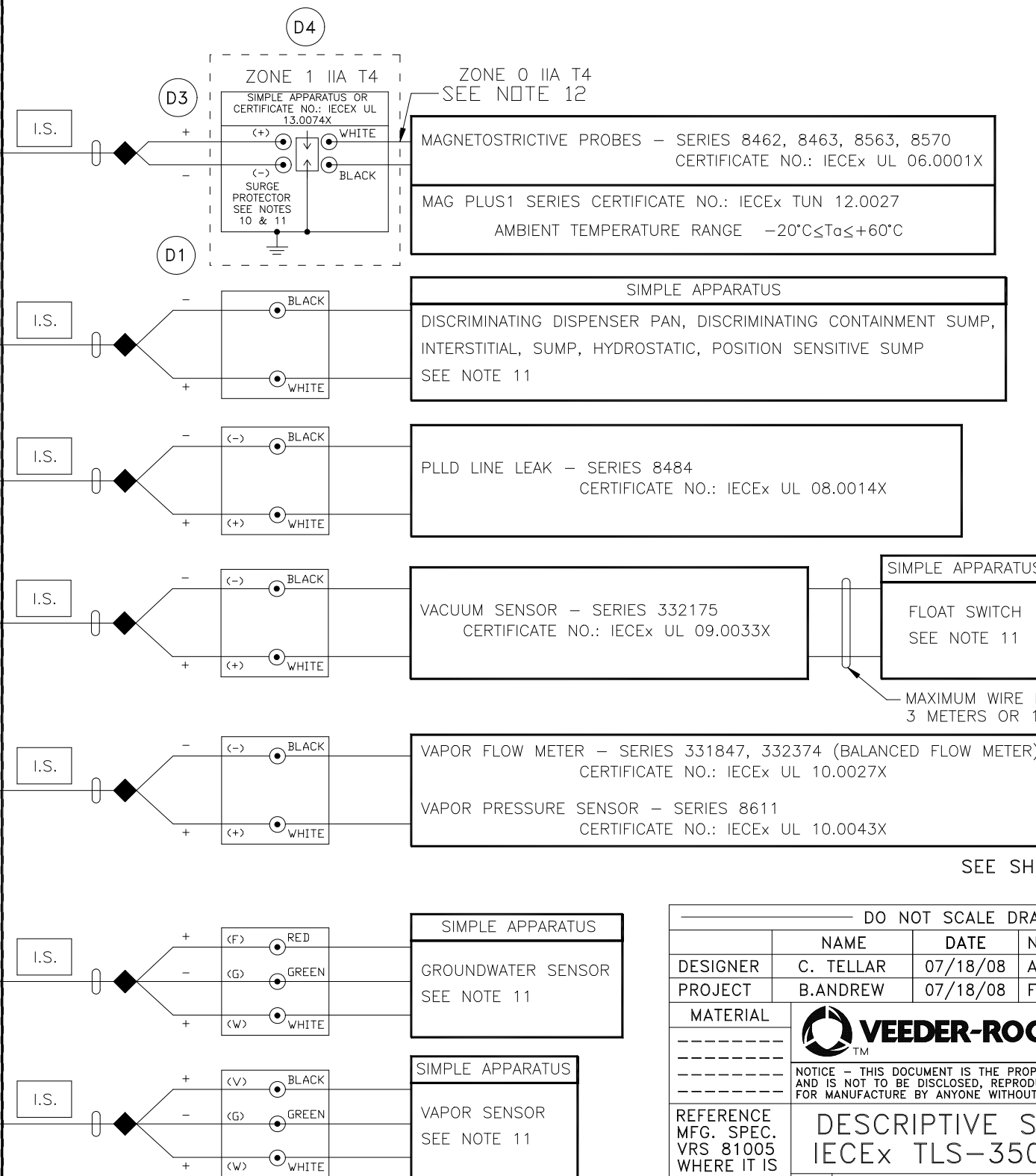
BARRIER GROUND
 SEE NOTE 8



TERMINATION
 POINTS FOR
 SHIELDED CABLE

HAZARDOUS AREA

INTRINSICALLY SAFE (I.S.) APPARATUS
 AMBIENT TEMPERATURE RANGE
 (UNLESS NOTED)
 $-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$
 Ex ia IIA T4 Ga
 Ex ia IIA T4 Gb
 Ex ia IIA T4 Ga/Gb (D2)



MAGNETOSTRICTIVE PROBES - SERIES 8462, 8463, 8563, 8570
 CERTIFICATE NO.: IECEX UL 06.0001X

MAG PLUS1 SERIES CERTIFICATE NO.: IECEX TUN 12.0027
 AMBIENT TEMPERATURE RANGE $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

DISCRIMINATING DISPENSER PAN, DISCRIMINATING CONTAINMENT SUMP,
 INTERSTITIAL, SUMP, HYDROSTATIC, POSITION SENSITIVE SUMP
 SEE NOTE 11

PLLD LINE LEAK - SERIES 8484
 CERTIFICATE NO.: IECEX UL 08.0014X

VACUUM SENSOR - SERIES 332175
 CERTIFICATE NO.: IECEX UL 09.0033X

VAPOR FLOW METER - SERIES 331847, 332374 (BALANCED FLOW METER)
 CERTIFICATE NO.: IECEX UL 10.0027X

VAPOR PRESSURE SENSOR - SERIES 8611
 CERTIFICATE NO.: IECEX UL 10.0043X

GROUNDWATER SENSOR
 SEE NOTE 11

VAPOR SENSOR
 SEE NOTE 11

SIMPLE APPARATUS
 FLOAT SWITCH
 SEE NOTE 11

MAXIMUM WIRE LENGTHS:
 3 METERS OR 10 FEET.


Certified Product
 No changes permitted
 without reference to the
 "Notified Body (NB)"

SEE SHEET 2 FOR NOTES

REV	DESCRIPTION	BY	DATE	ECO
C	ADDED MAG PLUS1 CERTIFICATION NO.: IECEX TUN 12.0027	TB	2012/07/26	CN-05345
D	1. UPDATE GROUNDING SYMBOL. 2. ADD PROTECTIVE STRING 3. ADD CERT No: IECEX UL 13.0074X. 4. UPDATE DASHED LINES. 5. REVISE NOTE 9. 6. REVISE NOTE 15. 7. ADD NOTE 16.	TKR	2013/10/10	CN-06776


DO NOT SCALE DRAWING				
DESIGNER	NAME	DATE	NEXT GRP.	
C. TELLAR	07/18/08	ASSEMBLY		
B. ANDREW	07/18/08	FORM NO		
MATERIAL		SIMSBURY, CONNECTICUT 06070 U.S.A.		
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REFERENCE MFG. SPEC. VRS 81005 WHERE IT IS APPLICABLE				
DESCRIPTIVE SYS DOCUMENT IECEX TLS-350 & TLS-350R				
UNSPECIFIED TOLERANCES +/- 0.005	SIZE D	DRAWING NUMBER 331940-101	REV. D	STATUS REL
SCALE	NONE	SHEET 1	OF 2	

NOTES:

1. A MAXIMUM CABLE LENGTH OF 305 METERS OR 1,000 FEET IS ALLOWED TO CONNECT ANY SINGLE I.S. DEVICE TO THE ASSOCIATED APPARATUS. THE TOTAL ALLOWABLE CABLE LENGTH USED TO CONNECT ALL OF THE I.S. DEVICES TO THE ASSOCIATED APPARATUS IS 15,240 METERS OR 50,000 FEET.
2. EACH CABLE (OR WIRING) USED TO CONNECT I.S. DEVICES TO THE CONSOLE MUST NOT EXCEED A CAPACITANCE OF 328 pf/METER OR 100 pf/FOOT.
3. THE TOTAL CABLE CAPACITANCE, COMBINING ALL OF THE CABLE USED TO CONNECT THE INTRINSICALLY SAFE DEVICES TO THE ASSOCIATED APPARATUS, MUST NOT EXCEED 5,0μF.
4. EACH CABLE MUST NOT EXCEED AN INDUCTANCE OF 0,656 μH/METER OR 0,2 μH/FOOT.
5. THE L/R RATIO OF THE CABLE MUST NOT EXCEED 200 μH/OHM.
6. FOR EACH TLS-350 CONSOLE INSTALLED THE MAXIMUM NUMBER OF I.S. DEVICES CONNECTED TO THE ASSOCIATED APPARATUS IS 64. A MAXIMUM OF FOUR TLS RF CONSOLES CAN BE CONNECTED TO THE TLS-350 CONSOLE, WHERE EACH CONNECTED TLS RF CHANNEL EQUALS ONE I.S. DEVICE.
7. NON-HAZARDOUS ASSOCIATED APPARATUS IS AS SHOWN AND MUST NOT BE SUPPLIED FROM OR CONTAIN, UNDER NORMAL OR ABNORMAL CONDITIONS, A SOURCE OF POTENTIAL WITH RESPECT TO EARTH IN EXCESS OF 250V RMS OR 250V dc, Um = 250V.
8. CONNECT THE BARRIER GROUND TO THE EARTH GROUND BUS AT THE POWER DISTRIBUTION PANEL WITH A 4 sq. mm (10 AWG) (OR LARGER) CONDUCTOR. GROUNDING MUST COMPLY WITH IEC 60079-0, CLAUSE 15.4.
- D5 9. THIS SYMBOL, , DENOTES A FIELD WIRING CONNECTION INSIDE A WEATHERPROOF JUNCTION BOX. EACH INTRINSICALLY SAFE DEVICE MAY USE AN OPTIONAL SURGE PROTECTOR IN PLACE OF THE WEATHERPROOF JUNCTION BOX LOCATED IN ZONE 1. SURGE PROTECTORS CONSIST OF EITHER A CERTIFIED IN-LINE DEVICE, OR ARE SIMPLE APPARATUS.
10. A RISK ANALYSIS MUST BE PERFORMED TO DETERMINE IF THE INSTALLATION LOCATION IS SUSCEPTIBLE TO LIGHTNING OR OTHER SURGES. IF NECESSARY, ADD PROTECTION AGAINST LIGHTNING AND OTHER ELECTRICAL SURGES IN ACCORDANCE WITH IEC 60079-25, SECTION 10. IF REQUIRED, INSTALL A SURGE PROTECTOR IN ZONE 1 AS CLOSE AS POSSIBLE TO THE BOUNDARY WITH ZONE 0. THE SITE PREPARATION GUIDE, MANUAL NO. 577013-578, PROVIDES ADDITIONAL DETAILS ABOUT RISK ASSESSMENT.
11. IT IS THE RESPONSIBILITY OF THE INSTALLER TO DETERMINE COMPLIANCE OF SIMPLE APPARATUS. SIMPLE APPARATUS USED WITH THIS SYSTEM MUST CONFORM TO THE FOLLOWING REQUIREMENTS:
 - A) CONSTRUCTED OF PASSIVE COMPONENTS ONLY, FOR EXAMPLE, SWITCHES, JUNCTION BOXES AND RESISTORS.
 - B) CONSTRUCTED WITHOUT ANY SOURCES OF STORED ENERGY SUCH AS BATTERIES, CAPACITORS AND INDUCTORS.
 - C) CONSTRUCTED WITHOUT SOURCES OF GENERATED ENERGY THAT PRODUCE MORE THAN 1.5V, AND 25mW OR SOURCES THAT CONTAIN A MEANS OF INCREASING THE VOLTAGE.
 - D) IF CONSTRUCTED WITH A METALLIC HOUSING THE SIMPLE APPARATUS SHALL BE CAPABLE OF WITHSTANDING THE TEST VOLTAGE TO EARTH IN ACCORDANCE WITH IEC 60079-11, CLAUSE 6.4.12 AND ITS TERMINALS MUST CONFORM TO IEC 60079-11, CLAUSE 6.3.1.
 - E) NONMETALIC ENCLOSURES AND ENCLOSURES OF LIGHT METALS MUST COMPLY WITH IEC 60079-0 SECTIONS 7 & 8 AND IEC 60079-26 CLAUSE 4.3.3.
 - F) BASED ON THE AVAILABLE POWER WITHIN THE SYSTEM, SIMPLE APPARATUS THAT HAVE ELECTRICAL COMPONENTS THAT EXCEED 20 sq. mm IN TOTAL SURFACE AREA, MAY BE ASSESSED AS HAVING A T4 TEMPERATURE CODE, AT THE SPECIFIED AMBIENT TEMPERATURE RANGE OF -40°C ≤ Ta ≤ +60°C. OTHER TYPES OF SIMPLE APPARATUS MUST BE ASSESSED IN ACCORDANCE WITH IEC 60079-11, SECTION 6.2.
12. CABLE GLAND MUST BE A SUITABLE PROCESS CONNECTION IN ACCORDANCE WITH IEC 60079-26.
13. SPECIAL CONDITIONS FOR SAFE USE, AS DEFINED IN THE CERTIFICATE OF CONFORMITY AND THE SITE PREPARATION GUIDE, MANUAL NO. 577013-578, MUST BE TAKEN INTO ACCOUNT.
14. THIS SYSTEM DESCRIPTIVE DOCUMENT DESCRIBES THE INTRINSICALLY SAFE EQUIPMENT AND ASSOCIATED APPARATUS THAT TOGETHER FORM AN INTRINSICALLY SAFE SYSTEM.
- D6 15. TLS-350 CONSOLES MUST BE INSTALLED IN AN INDOOR, NON-HAZARDOUS AREA IN ACCORDANCE WITH THE DESCRIPTIVE SYSTEM DOCUMENT AND THE INSTALLATION INSTRUCTIONS. ONLY ONE TLS-350 CONSOLE CAN BE CONNECTED TO ANY SINGLE INTRINSICALLY SAFE APPARATUS AS DESCRIBED ON SHEET ONE OF THIS DOCUMENT. MULTIPLE SOURCES OF POWER, ADDITIONAL TLS CONSOLES OR OTHER ASSOCIATED APPARATUS, CANNOT BE CONNECTED TO THE SAME INTRINSICALLY SAFE APPARATUS.
- D7 16. THE MAG PLUS1 SERIES PROBES MARKED Ex ia IIB T4 OR Ex ia IIC T4, WHEN USED WITHIN THIS SYSTEM THE DEVICE IS LIMITED TO GROUP IIA.

STANDARDS:

- Ex ia, GROUP IIA, T4 Ga
- | | |
|--------------|---|
| IEC 60079-0 | ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-PART 0: GENERAL REQUIREMENTS |
| IEC 60079-11 | ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-PART 11: INTRINSIC SAFETY "I" |
| IEC 60079-25 | ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES-PART 25: INTRINSICALLY SAFE SYSTEMS |
| IEC 60079-26 | ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES - PART 26: EQUIPMENT WITH EQUIPMENT PROTECTION LEVEL (EPL) Ga. |

		SIMSBURY, CONNECTICUT 06070 U.S.A.	
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DESCRIPTIVE SYS DOCUMENT IECEX TLS-350 & TLS-350R			
SIZE	DRAWING NUMBER	REV.	STATUS
D	331940-101	D	REL
SCALE	NONE	SHEET	2 OF 2